

What Is Claimed Is:

1. A method for manufacturing a press fabric for the press section of a paper machine, said method comprising the steps of:

5 a) manufacturing a nonwoven mesh fabric having a preselected width;

b) spirally winding said nonwoven mesh fabric in a plurality of non-overlapping turns;

c) abutting each turn of said nonwoven mesh fabric against that previously wound;

10 d) joining each turn of said nonwoven mesh fabric to that previously wound to form a base fabric of width greater than said preselected width of said nonwoven mesh fabric and to provide a base fabric in the form of an endless loop having an inner surface,
15 an outer surface, a longitudinal direction and a transverse direction; and

e) attaching a plurality of layers of staple fiber material to at least one of said inner and outer surfaces of said base fabric.

2. A method for manufacturing a press fabric as claimed in claim 1, wherein said base fabric is a first base fabric, further comprising, between steps d) and e), the steps of:

5 a) forming a plurality of endless loops of equivalent preselected length from said nonwoven mesh fabric;

b) arranging said plurality of endless loops in a side-by-side relationship;

10 c) abutting each of said plurality of endless loops against those adjacent thereto;

d) joining each of said plurality of endless loops to those adjacent thereto to form a second base fabric of width greater than said preselected width of

15 said nonwoven mesh fabric and to provide a second base fabric in the form of an endless loop having an inner surface, an outer surface, a longitudinal direction and a transverse direction; and

20 e) disposing said second base fabric on top of (around) said first base fabric to provide a laminated base fabric.

3. A method for manufacturing a press fabric as claimed in claim 2, further comprising, between steps d) and e), the step of attaching at least one layer of staple fiber material to said outer surface of said first base fabric.

4. A method for manufacturing a press fabric as claimed in claim 1, wherein said base fabric is a first base fabric, further comprising, between steps d) and e), the steps of:

5 a) spirally winding said nonwoven mesh fabric in a second plurality of non-overlapping turns;

b) abutting each turn of said nonwoven mesh fabric against that previously wound;

10 c) joining each turn of said nonwoven mesh fabric to that previously wound to form a second base fabric of width greater than said preselected width of said nonwoven mesh fabric and to provide a second base fabric in the form of an endless loop having an inner surface, and outer surface, a longitudinal direction and a transverse direction; and

15 d) disposing said second base fabric on top of (around) said first base fabric to provide a laminated base fabric.

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5. A method for manufacturing a press fabric as claimed in claim 4, further comprising, between steps c) and d), the step of attaching at least one layer of staple fiber material to said outer surface of said first base fabric.

6. A method for manufacturing a press fabric as claimed in claim 4, wherein said second plurality of non-overlapping turns is spirally wound in a direction opposite to that in said first base fabric.

7. A method for manufacturing a press fabric as claimed in claim 1, wherein said base fabric is a first base fabric, further comprising, between steps d) and e), the steps of:

5 a) providing a second base fabric woven from machine- and cross-machine-direction yarns, said second base fabric having an outer surface; and

10 b) disposing said second base fabric inside of said first base fabric to provide a laminated base fabric.

8. A method for manufacturing a press fabric as claimed in claim 7, further comprising, between steps a) and b), the step of attaching at least one layer of staple fiber material to said outer surface of said second base fabric.

9. A method for manufacturing a press fabric as claimed in claim 1 further comprising the step of:
attaching a plurality of layers of staple fiber material to both of said inner and outer surfaces of said base fabric.

10. A method for manufacturing a press fabric for the press section of a paper machine, said method comprising the steps of:

- 5 a) manufacturing a nonwoven mesh fabric having a preselected width;
- b) forming a plurality of endless loops of equivalent preselected length from said nonwoven mesh fabric;
- 10 c) arranging said plurality of endless loops in a side-by-side relationship;
- d) abutting each of said plurality of endless loops against those adjacent thereto;
- e) joining each of said plurality of endless loops to those adjacent thereto to form a base fabric
15 of width greater than said preselected width of said nonwoven mesh fabric and to provide a base fabric in the form of an endless loop having an inner surface, an outer surface, a longitudinal direction and a transverse direction; and
- 20 f) attaching a plurality of layers of staple fiber material to at least one of said inner and outer surfaces of said base fabric.

11. A method for manufacturing a press fabric as claimed in claim 10, wherein said base fabric is a first base fabric, further comprising, between steps e) and f), the steps of:

- 5 a) forming a second plurality of endless loops of equivalent preselected length from said nonwoven mesh fabric;
- b) arranging said second plurality of endless loops in a side-by-side relationship;
- 10 c) abutting each of said second plurality of endless loops against those adjacent thereto;

15 d) joining each of said second plurality of endless loops to those adjacent thereto to form a second base fabric of width greater than said preselected width of said nonwoven mesh fabric and to provide a second base fabric in the form of an endless loop having an inner surface, an outer surface, a longitudinal direction and a transverse direction; and

20 e) disposing said second base fabric on top of (around) said first base fabric to provide a laminated base fabric.

5 12. A method for manufacturing a press fabric as claimed in claim 11, further comprising, between steps d) and e), the step of attaching at least one layer of staple fiber material to said outer surface of said first base fabric.

13. A method for manufacturing a press fabric as claimed in claim 10, wherein said base fabric is a first base fabric, further comprising, between steps e) and f), the steps of:

5 a) spirally winding said nonwoven mesh fabric in a plurality of non-overlapping turns;

b) abutting each turn of said nonwoven mesh fabric against that previously wound;

10 c) joining each turn of said nonwoven mesh fabric to that previously wound to form a second base fabric of width greater than said preselected width of said nonwoven mesh fabric and to provide a second base fabric in the form of an endless loop having an inner surface, and outer surface, a longitudinal direction and a transverse direction; and

15 d) disposing said second base fabric on top of (around) said first base fabric to provide a laminated base fabric.

14. A method for manufacturing a press fabric as
20 claimed in claim 13, further comprising, between steps
c) and d), the step of attaching at least one layer of
staple fiber material to said outer surface of said
first base fabric.

15. A method for manufacturing a press fabric as
claimed in claim 10, wherein said base fabric is a
first base fabric, further comprising, between steps
e) and f), the steps of:

5 a) providing a second base fabric woven from
machine- and cross-machine-direction yarns, said
second base fabric having an outer surface; and

b) disposing said second base fabric inside of
said base fabric to provide a laminated base fabric.

16. A method for manufacturing a press fabric as
claimed in claim 15, further comprising, between steps
a) and b), the step of attaching at least one layer of
staple fiber material to said outer surface of said
5 second base fabric.

17. A method for manufacturing a press fabric as
claimed in claim 10 further comprising the step of:

attaching a plurality of layers of staple fiber
material to both of said inner and outer surfaces of
5 said base fabric.

18. A press fabric for the press section of a paper
machine, said press fabric comprising:

a base fabric, said base fabric having a first
layer, said first layer comprising a first nonwoven
5 mesh fabric strip, said first nonwoven mesh fabric
strip having a first lateral edge and a second lateral
edge, said first nonwoven mesh fabric strip being

spirally wound in a plurality of contiguous turns wherein said first lateral edge in a turn of said first nonwoven mesh fabric strip abuts said second lateral edge of an adjacent turn thereof, thereby forming a helically continuous seam separating adjacent turns of said first nonwoven mesh fabric strip, said helically continuous seam being closed by attaching abutting first and second lateral edges of said first nonwoven mesh fabric strip to one another, thereby providing said first layer and said base fabric in the form of an endless loop having a machine direction, a cross-machine direction, an inner surface and an outer surface; and

a plurality of layers of staple fiber material attached to one of said inner and outer surfaces of said base fabric by needling.

19. A press fabric as claimed in claim 18 further comprising:

a second layer, said second layer comprising a plurality of endless loops of equivalent preselected length of a nonwoven mesh fabric, each of said endless loops having a first lateral edge and a second lateral edge, said plurality of endless loops being in a side-by-side abutting relationship wherein said first lateral edge of one endless loop is joined to said second lateral edge of that adjacent thereto, thereby providing said second layer in the form of an endless loop having a machine direction, a cross-machine direction, an inner surface and an outer surface, said endless loop formed by said second layer being on top of (around) said endless loop formed by said first layer.

20. A press fabric as claimed in claim 19 further comprising at least one layer of staple fiber material between said first and second layers of said base fabric.

21. A press fabric as claimed in claim 18 further comprising:

5 a second layer, said second layer comprising a second nonwoven mesh fabric strip, said second nonwoven mesh fabric strip having a first lateral edge and a second lateral edge, said second nonwoven mesh fabric strip being spirally wound in a plurality of contiguous turns wherein said first lateral edge in a turn said second nonwoven mesh fabric strip abuts said
10 second lateral edge of an adjacent turn thereof, thereby forming a helically continuous seam separating adjacent turns of said second nonwoven mesh fabric strip, said helically continuous seam being closed by attaching abutting first and second lateral edges of
15 said second nonwoven mesh fabric strip to one another, thereby providing said second layer in the form of an endless loop having a machine direction, a cross-machine direction, and inner surface and an outer surface, said endless loop formed by said second layer
20 being on top of (around) said endless loop formed by said first layer.

22. A press fabric as claimed in claim 21 further comprising at least one layer of staple fiber material between said first and second layers of said base fabric.

23. A press fabric as claimed in claim 21 wherein said second layer of said base fabric is spirally

wound in a direction opposite to that of said first layer of said base fabric.

24. A press fabric as claimed in claim 18 further comprising:

5 a second layer, said second layer comprising a woven base fabric having machine-direction and cross-machine-direction yarns, said woven base fabric being in the form of an endless loop having a machine direction, a cross-machine direction, an inner surface and an outer surface, said endless loop formed by said second layer being inside of said endless loop formed
10 by said first layer.

25. A press fabric as claimed in claim 24 further comprising at least one layer of staple fiber material between said first and second layers of said base fabric.

26. A press fabric as claimed in claim 18 further comprising a plurality of layers of staple fiber material attached to the other of said inner and outer surfaces of said base fabric by needling.

27. A press fabric for the press section of a paper machine, said press fabric comprising:

5 a base fabric, said base fabric having a first layer, said first layer comprising a plurality of endless loops of equivalent preselected length of a nonwoven mesh fabric, each of said endless loops having a first lateral edge and a second lateral edge, said plurality of endless loops being in a side-by-side abutting relationship wherein said first lateral
10 edge of one endless loop is joined to said second lateral edge of that adjacent thereto, thereby

providing said first layer and said base fabric in the form of an endless loop having a machine direction, a cross-machine direction, an inner surface and an outer surface; and

a plurality of layers of staple fiber material attached to one of said inner and outer surfaces of said base fabric by needling.

28. A press fabric as claimed in claim 27 further comprising:

a second layer, said second layer comprising a second plurality of endless loops of equivalent preselected lengths of a nonwoven mesh fabric, each of said endless loops having a first lateral edge and a second lateral edge, said second plurality of endless loops being in a side-by-side abutting relationship wherein said first lateral edge of one endless loop is joined to said second lateral edge of that adjacent thereto, thereby providing said second layer in the form of an endless loop having a machine direction, a cross-machine direction, an inner surface and an outer surface, said endless loop formed by said second layer being on top of (around) said endless loop formed by said first layer.

29. A press fabric as claimed in claim 28 further comprising at least one layer of staple fiber material between said first and second layers of said base fabric.

30. A press fabric as claimed in claim 27 further comprising:

a second layer, said second layer comprising a nonwoven mesh fabric strip, said nonwoven mesh fabric strip having a first lateral edge and a second lateral

edge, said nonwoven mesh fabric strip being spirally wound in a plurality of contiguous turns wherein said first lateral edge in a turn of said nonwoven mesh fabric strip abuts said second lateral edge of an adjacent turn thereof, thereby forming a helically continuous seam separating adjacent turns of said nonwoven mesh fabric strip, said helically continuous seam being closed by attaching abutting first and second lateral edges of said nonwoven mesh fabric strip to one another, thereby providing said second layer in the form of an endless loop having a machine direction, a cross-machine direction, an inner surface and an outer surface, said endless loop formed by said second layer being on top of (around) said endless loop formed by said first layer.

31. A press fabric as claimed in claim 30 further comprising at least one layer of staple fiber material between said first and second layers of said base fabric.

32. A press fabric as claimed in claim 27 further comprising:

a second layer, said second layer comprising a woven base fabric having machine-direction and cross-machine-direction yarns, said woven base fabric being in the form of an endless loop having a machine direction, a cross-machine direction, an inner surface and an outer surface, said endless loop formed by said second layer being inside of said endless loop formed by said first layer.

33. A press fabric as claimed in claim 32 further comprising at least one layer of staple fiber material between said first and second layers of said base fabric.

34. A press fabric as claimed in claim 27 further comprising a plurality of layers of staple fiber material attached to the other of said inner and outer surfaces of said base fabric by needling.

35. A press fabric as claimed in claims 18, 21 or 30 wherein said nonwoven mesh fabric strip is a net-like structure of monofilament-like elements, and has a lengthwise direction and a crosswise-direction.

36. A press fabric as claimed in claim 35 wherein said monofilament-like elements are oriented in said lengthwise and crosswise directions.

37. A press fabric as claimed in claim 35 wherein said nonwoven mesh fabric strip is extruded from a thermoplastic resin.

38. A press fabric as claimed in claim 37 wherein said thermoplastic resin is selected from the group consisting of polyamide, polypropylene and polyethylene.

39. A press fabric as claimed in claim 35 wherein said monofilament-like elements have a width in the range from 0.1 mm to 1.0 mm.

40. A press fabric as claimed in claim 35 wherein said monofilament-like elements are spaced from one

another by a distance in the range from 0.1 mm to 2.0 mm.

41. A press fabric as claimed in claims 19, 27 or 28 wherein said nonwoven mesh fabric is a net-like structure of monofilament-like elements, and has a lengthwise direction and a crosswise direction.

42. A press fabric as claimed in claim 41 wherein said monofilament-like elements are oriented in said lengthwise and crosswise directions.

43. A press fabric as claimed in claim 41 wherein said nonwoven mesh fabric is extruded from a thermoplastic resin.

44. A press fabric as claimed in claim 43 wherein said thermoplastic resin is selected from the group consisting of polyamide, polypropylene and polyethylene.

45. A press fabric as claimed in claim 41 wherein said monofilament-like elements have a width in the range from 0.1 mm to 1.0 mm.

46. A press fabric as claimed in claim 41 wherein said monofilament-like elements are spaced from one another by a distance in the range from 0.1 mm to 2.0 mm.